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ESMO/ASCO recommendations for a Global Curriculum (GC) in medical oncology—edition 2016

Oncology is driven by an exponentially increasing complexity. As an example, the use of molecular profiling or the determination of molecularly based biomarkers for the selection of the appropriate targeted therapy has now become routine in clinical practice. Such developments must be covered during education and integrated at all levels, from basic medical oncology at the initial postgraduate level to advanced levels requiring specialised approaches at the level of continuing medical education [1].

Consequently, and in line with the internationalisation of healthcare in general and higher mobility of physicians and patients, the European Society for Medical Oncology (ESMO) and the American Society of Clinical Oncology (ASCO) have identified the need for a set of international recommendations for the clinical training of physicians that define the standard of qualifications, i.e. to specify the requirements to be fulfilled to qualify them as medical oncologists. Adherence to the Global Curriculum (GC) is to ensure that patients, wherever they live, have an equal chance of receiving treatment from well-trained physicians respecting multidisciplinary, to which both ESMO and ASCO are strongly committed.

The fundamental pillar is a common requirement of 5 years of training. This training period includes a minimum of 2 years in internal medicine followed by a minimum of 2 years of medical oncology. Also within these 5 years, half a year may be dedicated to clinical research that should create the basis for trainees' critical assessment and their continuous internalisation of new developments in the field.

In 2011, the European Commission based its formal recognition of medical oncology on the recommendations made by the ESMO/ASCO GC Task Force. Thus, medical oncology has been included among the medical specialties covered by the Directive 2005/36/EC on the recognition of professional qualifications [2, 3]. The fact that the European Commission accepted the requirement of a minimum of 5 years of specialisation led many countries to adopt a 5-year period for training in medical oncology.

The training requirements detailed in the GC apply to professionals across the globe and reinforce the position of ESMO and ASCO as leading organisations for oncology [4, 5]. The GC 2016 is a visible sign that these two societies, who cooperatively prepared this edition, are simultaneously advocating for and acting as reliable sources of education in medical oncology and encouraging a multidisciplinary approach to cancer care.

background

Medical oncology as a speciality was established in 1965, after ASCO was founded in the United States in 1964. A uniform system of training in medical oncology in the United States was

formulated by the American Board of Internal Medicine in 1973 [6]. In 1998, ASCO published a training resource document for development of a curriculum in medical oncology [7].

In 1989, ESMO started an examination programme in medical oncology for physicians actively working in the field. To guarantee the maintenance and updating of the knowledge, skills, and attitudes of these physicians, that is essential to the provision of quality care, a programme of continued education in medical oncology, the ESMO Medical Oncologist's Recertification Approval (MORA) programme, was introduced in 1994 [8].

Both ESMO and ASCO support ongoing professional development in medical oncology as part of their missions. As the leading oncology professional societies worldwide, visible by the significant number of international members and attendees at their meetings, and due to the increasingly global nature of cancer care and the increased international interest in the field, a GC was perceived by both societies as an important joint project. Since 2002, ESMO and ASCO have been working together to develop common recommendations for training in medical oncology to overcome barriers in the quality of care.

GC: editions 2004 and 2010

In 2004, a joint ESMO/ASCO GC Task Force established the first Global Core Curriculum outline for training in medical oncology. This outline was distributed to universities and medical oncology societies and was simultaneously published in the *Annals of Oncology* and the *Journal of Clinical Oncology* [9, 10].

Interest in using the Global Core Curriculum outline has increased considerably since its inception, as shown by the availability of translations into a range of different languages available on the ESMO and ASCO websites [11, 12]. It was also used as a model for development of the speciality of medical oncology in several countries around the world. Additionally, a Log-Book was launched as a support tool for medical oncologists in training with the purpose of keeping a record of oncology trainees' educational programmes and their progress and providing supervisors with a tool to assess performance [13, 14]. The GC was updated in 2010, and the Log-Book has been updated by the GC Working Group (WG), a group that evolved from the previous Task Force, to reflect continuous commitment to education of trainees in medical oncology [15–18].

The 2010 edition presented a broad range of recommendations to be adopted by national educational and healthcare authorities and to be implemented according to the resources and conditions of each country. The GC WG recognised that the diversity of health and educational systems around the world may have rendered some curriculum recommendations aspirational at the stage of its implementation, even for those systems with well-developed training programmes in medical oncology, but that were, nevertheless, worth pursuing further.

The intention of the propagation of a GC was and is to identify and reduce the degree of heterogeneity of the medical content and also, at the organisational level, the duration and

structure of the internal medicine part of the training in medical oncology in Europe [19]. According to data assessed by the ESMO/ASCO GC European landscape survey on the evolution of medical oncology training in Europe, medical oncology is recognised as a separate speciality in 23 countries. The GC recommendations were adopted in nine countries, adapted in seven countries, and this process was ongoing in two other countries [19].

logistic development

The 2004 edition of the GC was drafted by the chair and the respective members of the GC Task Force. The system of learning outcomes based on awareness, knowledge, and competence was developed only in the accompanying Log-Book [13, 14].

The updated 2010 edition of the GC was drafted by several oncologists upon invitation from the GC Task Force. This edition was reviewed by a panel of experts from both societies. The use of a categorisation of awareness, knowledge, and competence was restricted to the Log-Book.

Planning for the 2016 edition of the GC started in May 2015, first by the GC WG and later on, an *ad hoc* editorial board, which was composed of GC WG representatives from both ESMO and ASCO, was responsible for further selection of the topics and the authors of the respective contributions. All contributions underwent extensive anonymised expert review.

GC 2016: changes in form and content

The major change in the 2016 edition consists of the adoption of acknowledged pedagogical principles. This resulted in a template-based format for the learning objectives, wherever appropriate. Thus, the qualities of the learning objectives have been divided into the subcategories of awareness, knowledge, and skills. This holds true primarily for the training in the different tumour entities, and, where possible, the more general teaching items are also subjected to this new format to a large extent.

In recent years, important advances in medical oncology have been achieved. The unequivocal demands of personalised or precision medicine on the one side and of completely different developments, like the perpetually increasing survivorship community, on the other side—to mention just two examples of recent changes in oncology—have led to the development of the GC 2016 edition [20]. With regard to content, multiple changes and innovations were integrated, such as:

- targeted therapies have been integrated into the (sub)chapters of the separate tumour entities, wherever suitable, to match the clinical reality;
- immunotherapy is presented in a separate chapter to reflect its actual impact;
- biological therapy and immunotherapy are now presented as separate chapters;
- pathology, molecular pathology, laboratory medicine, translational research, and principles of personalised cancer medicine, which all previously belonged to the subsection 'Basic principles in the management and treatment of malignant diseases', have been transformed into separate chapters due to their importance, accepting some unavoidable overlap;

- clinical research and statistics have been split into separate chapters under 'Basic scientific principles';
- tumour immunology has been separated into 'Tumour immunology', which has been kept under 'Basic scientific principles', and into 'Immunotherapy', which has been moved as a separate chapter to 'Therapy';
- imaging and molecular imaging have been separated into two chapters and are followed by an additional chapter on 'RECIST';
- rare cancers have been established as a novel subsection;
- cancer treatment in patients with comorbidities is dealt with in a new subsection;
- genetic counselling is given increased attention as a separate section due to its emerging role in routine clinical practice;
- survivorship, with its tremendously increasing impact, is also now presented in a separate section.

With regard to culturally sensitive contents, like supportive measures, palliative care, end-of-life-care, geriatric oncology, psychosocial aspects of cancer, patient education, survivorship, as well as bioethical, legal, and economic issues, positions were reserved to be filled by representatives from both societies. In particular, these authors were asked to take into account the global nature of the curriculum.

Altogether, the GC 2016 consists of 12 sections comprising 17 subsections, 44 chapters, and 35 subchapters, provided by 96 different authors, among them 64 primarily ESMO-related and 32 primarily ASCO-related.

next steps of deployment for ESMO and ASCO

The GC 2016 will be released at the next annual ESMO Congress 2016 in Copenhagen, and a corresponding Log-Book will be released in 2017 [11, 12].

The target population of the GC is primarily university teaching staff, mentors of medical oncology training programmes, and young medical oncologists in training. The GC WG intends to work closely with the respective national medical oncology societies via the ESMO national representatives and to seek their endorsement of the GC 2016. In addition, ESMO and ASCO also invite practising oncologists and clinicians, and even national health authorities and politicians, to become familiar with the 2016 edition. The so-called 'implementation symposia' will serve to efficiently implement the GC 2016 in the various oncologic communities.

To assess the impact of the GC 2016 on the training landscape in medical oncology—this time not restricted to Europe [19]—the GC WG has envisaged performing a global GC landscape survey therewith monitoring its actual baseline status, i.e. the status before implementation of the GC 2016.

future outlook

The development and registration of increasingly expensive drugs force all national economies to develop a cost-effective use of these cancer drugs. Both societies have presented their positions regarding a rational approach to deal with an economic attitude versus options for cancer treatment [21, 22]. This reflects

in a very concrete way what is described as the shift of the old social contract of the Harrison-era that emphasised patient care to the new social contract in our actual managed-care era that emphasises cost containment and efficiency [23, 24]. Awareness and detailed, up-to-date knowledge of this additional dimension of cancer care also need to be included in future medical oncology education to guarantee sustainable cancer care, as already required in the corresponding subchapter on economic issues of new cancer drugs in the GC 2016 [1].

This leads to an altered view of medical education, not only as far as the content is concerned but also regarding the teaching and assessment strategies. Both content and trustworthy professional activities are meticulously assigned to the specified learning outcome categories [25, 26].

After having carried out the major step of harmonisation of the learning requirements to qualify as a medical oncologist, the GC WG is endorsing the next logical step of harmonising the teaching and assessment strategies.

A plethora of learning mechanisms and instruments exists, including Internet-based tools such as YouTube videos or the iTunes U educational app, comprised of a variety of products with partly complementary and partly overlapping content. The GC WG will have to select adequate teaching material covering all content required by the GC and to be aware of new areas which should be covered in a timely manner by its carrier societies. Although going beyond the main mission of the GC WG, both societies take care of leaders generation programmes to complement those skills not necessarily being covered by the GC, such as managerial skills. With the corresponding Log-Book, a harmonised instrument for assessment will be provided soon. In order to also react appropriately in this area to the internationalisation on the one side and increasing specialisation on the other, a compilation of subdivided assessments carried out at dislocated teaching settings (e.g. accredited courses on specific topics) and via different accredited teaching providers may be considered as a strategy.

Due to a broadened perspective of the GC WG, it will embark on initiatives in geographical areas of future interest for the societies to contribute to harmonisation of the training in medical oncology worldwide.

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